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Felix Buechi *et al.*
Appl. No.: 10/608,088

REMARKS/ARGUMENTS

Applicants appreciate the withdrawal of the objections to the drawings, the § 112 rejections and the prior art rejections of the February 2, 2006 Office Action.

Claim Status

After entry of this Amendment, Claims 1, 3 – 10 and 12 – 23 are pending. By this Amendment, Claims 1, 3, 6, 10, 12 and 18 are amended, and Claims 2 and 11 are cancelled.

Claim Rejections – 35 U.S.C. §112

The Examiner rejects Claims 1 – 23 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. More particularly, the examiner asserts that it is unclear how humidity can be transferred in the anode or cathode areas when the flow channels therein are separated in a fluid-tight manner.

Claim 1 is amended as set forth above and includes limitations of Claim 2 (now cancelled). Claim 1, as amended, defines the steps of routing the fluid flowing from one of the anode and cathode areas along an opposite side of a membrane to the fluid flowing into said one of said anode and cathode areas, and discharging the fluid flowing from one of the anode and cathode areas. The membrane is pervious to the humidity such that the exchanged fluid passes through the membrane.

Claim 10, which defines a fuel cell, is amended as set forth above and includes limitations of Claim 11 (now cancelled). Claim 10, as amended defines that the humidity exchanger comprises a humidifying and dehumidifying zone separated by a humidity pervious membrane, and that the inflow line is positioned in the humidifying zone and the outflow line is positioned in the dehumidifying zone.

With these amendments, the wording that may have lead the Examiner to assert that it is unclear how humidity can be transferred in the anode or cathode areas when the flow channels therein are separated in a fluid-tight manner is avoided. The method of amended Claim 1 and the fuel cell of amended Claim 11 provide that humidity is removed from the fluid flow expelled from the cathode area and is added to the fluid flow which

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flows into the cathode area. (Page 3, lines 21-26, of the present specification.) As to the general operation of the embodiment shown in Figs. 3 and 4, the specification explains further, as follows:

This arrangement allows freshly supplied ambient air from inflow channel 28 to pass membrane section 27, pick up humidity, and then to pass under the web 21 via channel section 32 into channel 7b, where it spreads along the membrane section 26 of the cathode area 23, and because of its increased humidity, prevents the membrane area 34, situated at the inlet of the channels 7b, from drying out. As it continues on along the membrane section 26, the ambient air again picks up the humidity it loses in the membrane area 34, and then passes through the uptake channel 33 into the dehumidifying zone 24 of section B, where in the outflow channel 29 it again loses a considerable part of its humidity, since this penetrates the membrane section 27 and is absorbed on the other side of the membrane 4 by the inflowing air. (Page 8, lines 10-26.) The membrane 4 is, as a polymer electrolyte membrane, pervious to water. (Page 8, line 1.)

Applicants believe that amended Claims 1 and 10 clarify that the humidity transfer occurs via a pervious membrane. Claims 1, 3 – 10 and 12 – 23 are, therefore, believed to comply with the enablement requirement of 35 U.S.C. § 112, first paragraph. Applicants respectfully request the Examiner to reconsider and withdraw the rejections under 35 U.S.C. § 112, first paragraph, and to pass Claims 1, 3 – 10 and 12 – 23 to allowance.

Further, the Examiner rejects Claims 1 – 23 under 35 U.S.C. § 112, second paragraph, as being indefinite. These rejections under 35 U.S.C. § 112, second paragraph, correspond in essence to the rejections under 35 U.S.C. § 112, first paragraph. The above arguments regarding the rejections under 35 U.S.C. § 112, first paragraph, are therefore repeated herewith. Applicants believe that amended Claims 1 and 10 comply with the definiteness requirement of 35 U.S.C. § 112, second paragraph. Applicants respectfully request the Examiner to reconsider and withdraw the rejections under 35 U.S.C. § 112, second paragraph, and to pass Claims 1, 3 – 10 and 12 – 23 to allowance.

In view of the foregoing, Applicants respectfully submit that the amendments to Claim 1 and 10 add features from dependent claims. No new matter has been added. These amendments more specifically define the claimed subject matter.

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Conclusion

The present response is intended to correspond with the Revised Amendment Format. Should any part of the present response not be in full compliance with the requirements of the Revised Amendment Format, the Examiner is asked to contact the undersigned for immediate correction.


For the above reasons, Applicants respectfully submit that the application is in condition for allowance, and such allowance is herewith respectfully requested.

Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicants' attorney in order to resolve such issues promptly.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 502464 referencing attorney docket number 2003P09049US.

Respectfully submitted,

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John P. Musone
Attorney for Applicants
Registration No. 44,961
Tel: (407) 736 6449
Customer No.: 28204